

DOCKET NO. VERTE.032CPCCC1D

Serial No. 10/726, 774

Response to Notice of Non-Compliant Amendment

Amendments to the Specification

On page 1 of the application, please make the following changes to the title:

WAFER CLEANING METHOD OF CLEANING A SIDE OF A THIN FLAT SUBSTRATE BY APPLYING SONIC ENERGY TO THE OPPOSITE SIDE OF THE SUBSTRATE

On page 20 of the application, amend the Abstract as follows:

~~Semiconductor wafers are cleaned using megasonic energy to agitate cleaning fluid applied to the wafer. A source of energy vibrates an elongated probe which transmits the acoustic energy into the fluid. The probe has a solid cleaning rod and a flared or stepped rear base. In one form, the probe is made of one piece, and in another, the rod fits into a socket in the base. This enables a rod to be made of material which is compatible with the cleaning solution, while the base may be of a different material. A heat transfer member acoustically coupled to the probe base and to a transducer conducts heat away from the transducer. A housing for the heat transfer member and the transducer supports these components and provides means for conducting coolant through the housing to control the temperature of the transducer. In another arrangement, an end of the housing is coupled between the transducer and the probe. In one arrangement, fluid is sprayed onto both sides of a wafer while a probe is positioned close to an upper side. In another arrangement, a short probe is positioned with its end face close to the surface of a wafer, and the probe is moved over the wafer as it rotates. The probe may also be positioned through a central hole in a plurality of discs to clean a group of such elements at one time. A method of processing thin flat articles, particularly semiconductor wafers, utilizing sonic energy. In one aspect, the invention is a method comprising: supporting a substrate in a generally horizontal orientation and transmitting sonic energy to the substrate while flowing liquid onto both sides of the substrate to loosen particles on both sides of the substrate while maintaining said orientation. In another aspect, the invention is a cleaning method comprising: applying cleaning fluid to one side of a thin flat article while supporting the article in a generally horizontal orientation; and applying energy to the other one of the sides with sufficient power to produce vibration on the one side in the area of the cleaning fluid to loosen particles on the one side, while maintaining said orientation.~~